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Waste pyrolysis gasification melting apparatus for gasifying waste e.g. city refuse — has hot air supply unit which generates combustion gas of pyrolysis gas into high temperature gas to be used as heat source of outside heat kiln furnace

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NOVELTY - Waste (6) is dried by an air passage drying machine (18) and decomposed in the lower side of an outside heat kiln furnace (1) to generate pyrolysis gas (6a) which leads to a hot air supply unit (9). The combustion gas of pyrolysis gas is generated as high temperature gas in the hot air supply unit to be used as the heat source of the outside heat kiln furnace. DETAILED DESCRIPTION - The air passage drying machine is installed to the upper side of the outside heat kiln furnace. The outside heat kiln furnace has a flue gas line (17) connected with the air passage drying machine. The flue gas line guides the flue gas (10a) of the outside heat kiln furnace to be used as a heat source of the air passage drying machine.

Use: For gasifying waste e.g. city refuse.

Advantage: Effectively gasifies waste by pyrolysis. Simplifies drying process of waste at short period of time. Reduces the size of the outside heat kiln furnace. Simplifies the structure of the waste pyrolysis gasification apparatus. DESCRIPTION OF DRAWING(S) - The figure shows the schematic diagram of the waste pyrolysis gasification melting apparatus. (1) Outside heat kiln furnace; (6) Waste; (6a) Pyrolysis gas; (9) Hot air supply unit; (10a) Flue gas; (17) Flue gas line; (18) Air passage drying machine. (5pp Dwg.No.1/2)

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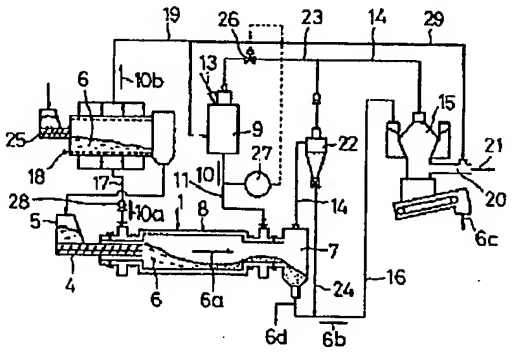

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FRAMATOME *EP -165-839-A
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Utilising surplus gas produced when pyrolysing wood - to give charcoal by reforming using heat from burning charcoal fines, and using reformed gas as fuel in electricity prodn.

C86-000527 E(AT DE IT SE)

Process for utilisation of pyrolysis gas extracted from a plant f r prodn. of charcoal by pyrolysis of biomass includes use of a reforming furnace, wherein the excess of pyrolysis gas over that used as fuel in drying and pyrolysis is passed over a bed of the unmarketable fines fraction of the charcoal produced, which is kept at high temp. by injection of an oxidant gas (e.g. air). A clean lean gas, based on CO and H_2, is produced, and is useful, after removing water, for prodn. of at least the energy required for autonomous operation of the installation.

USE/ADVANTAGE

The process is useful e.g. where charcoal is being produced by pyrolysis of copsewood. The energy produced from the gas, e.g. in an electricity generating set, is sufficient to supply a sawmill and base camp for the personnel, so allowing the whole installation to be sited near the source of wood.

There is optimum use of the calorific value of the copsewood.

PROCESS

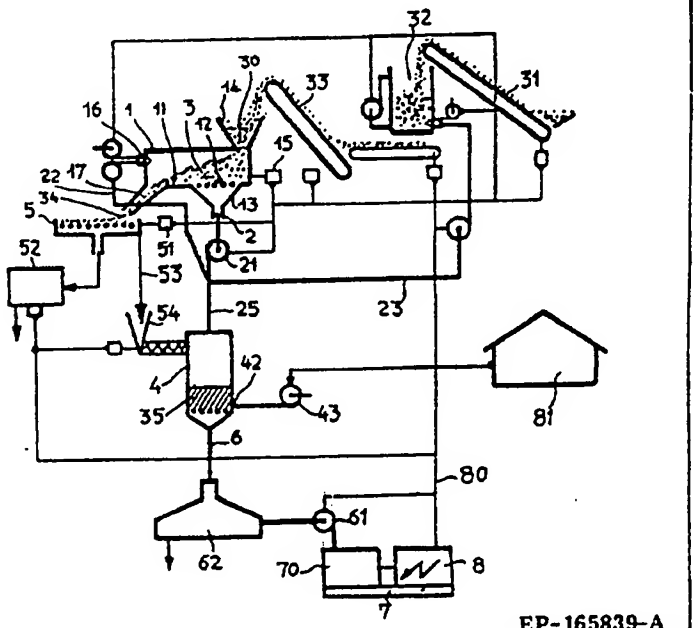
Wood pieces are continuously fed to a drying furnace (32) with direct gas heating, and leave contg. about 15% water. The wood then passes to the pyrolysis furnace (1), also directly heated by fuel gas, in which a bed of the wood is moved slowly over a grill, down through which the evolved gases are extracted. The charcoal leaving (1) passes through a screening device, which removes the fines. As much as required of the gases evolved in (1) is recirculated to (32) and (1) as fuel. The remainder is passed down the reforming furnace (4) through the bed of charcoal fines, which is continuously combusted by injected air. The reformed gas withdrawn below the bed passes to a condenser for drying and then as fuel to a piston engine or gas turbine, driving an alternator (8).

EXAMPLE

Pyrolysis of 1 tonne of wood (15% water) per hr. produces a surplus of 600 N cu.m of pyrolysis gas, having total lower heating value (LHV) 3 million KJ. The heat required in

r forming the hydrocarbons in this gas is 560,000 KJ which is largely covered by the heating value of the 15kg charcoal fines produced per hr. The reformed gas, after drying, comprises 650 N cu.m/h of LHV 1100 kcal/N cu.m, and this can produce 200 kW from a generating set. The pyrolysis plant and its auxiliaries require 70 kW, leaving 130 kW for e.g. a base camp.(10pp1492RKMHDwgNo1/1).

(F) ISR:- FR-897863 FR-976559 FR2448566



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